



Water Conditions Summary

Operations Control and Technical Support Department Operations & Maintenance Resource Area

Governing Board Presentation
September 12, 2002

The background features a large, light blue watermark of the University of Maryland logo, which is a circular seal containing the text "UNIVERSITY OF MARYLAND" and "1875".

Meteorological Conditions

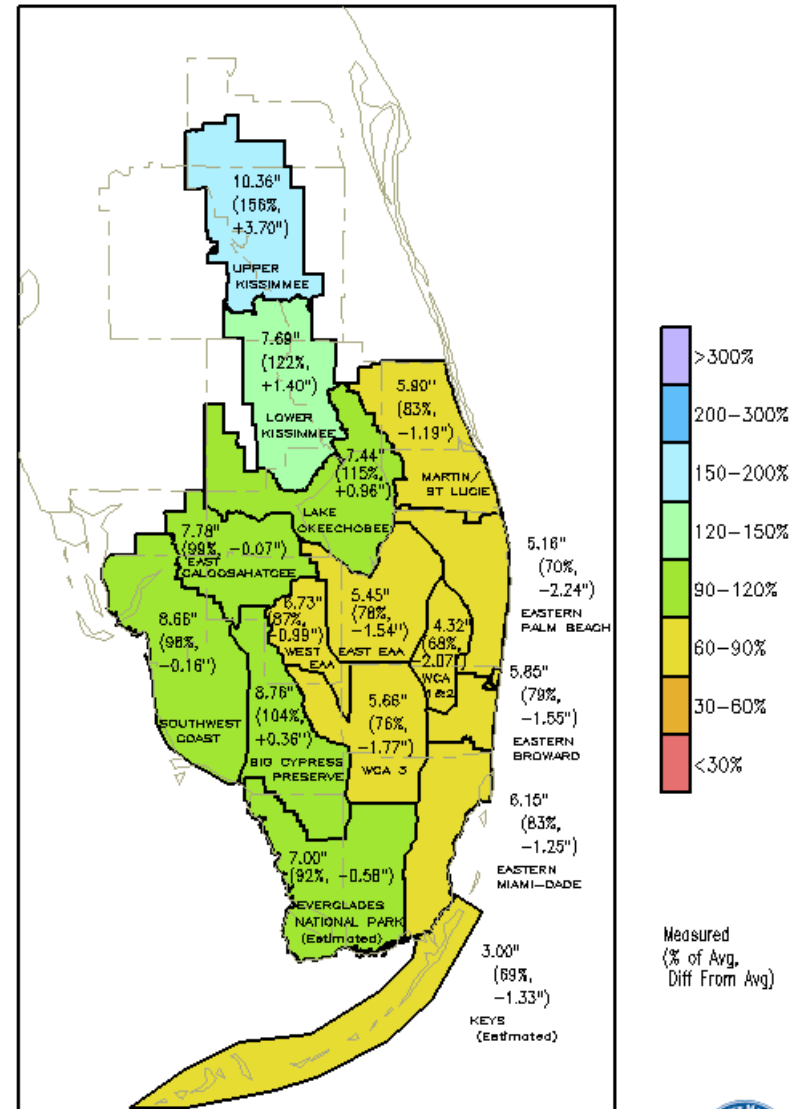
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Meteorological Conditions

- **August exhibited average rainfall District-wide**
- August Rainfall : District-wide rainfall was 99% of average
 - Normal Rainfall: 7.35 inches
 - Actual Rainfall: 7.26 inches
 - Est. Pan Evaporation: 5.40 inches
- September Rainfall : To-date District-wide rainfall is 125% of average

SFWMD Rainfall
02-aug-2002 to 01-sep-2002

- While August exhibited near average rainfall over most of the District, the distribution was highly skewed.
- Upper Kissimmee Basin received 156% of normal rainfall
- Lower Kissimmee Basin received 122% of normal rainfall
- Eastern part of the District received between 69 and 89% of normal rain



DISTRICT-WIDE: 7.26" (99%, -0.09")

GRADS: COLA/ICES


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2002 Hurricane Season Status








Category	Predicted	Average	To Date
Named Storms	8	9	7
Hurricanes	3	6	1
Strong Hurricanes	1	2	0











General Hydrologic Conditions

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General Hydrologic Conditions

-  **Upper Chain** - High seasonal levels
-  **Kissimmee River** - Normal seasonal levels
-  **Lake Okeechobee** - Normal seasonal levels
-  **Lake Okeechobee Agriculture**
-  **Estuaries** - Low salinity

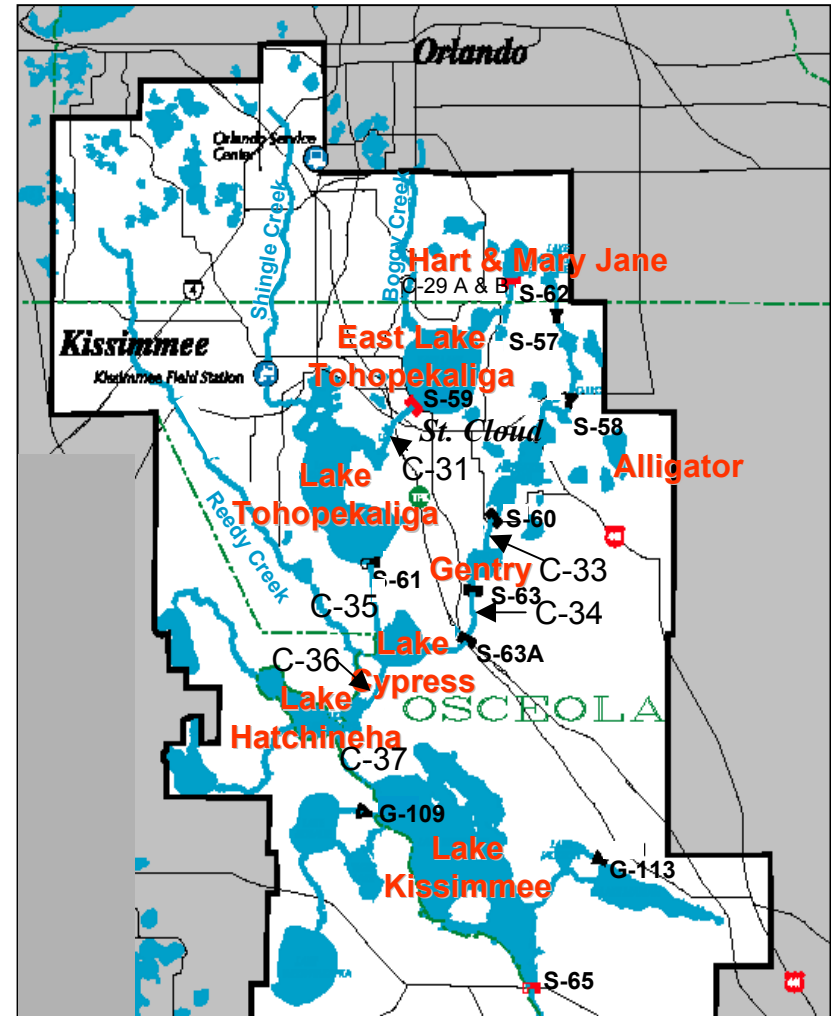
General Hydrologic Conditions

-  **Water Conservation Area 1** - Norm. Stages
-  **Water Conservation Area 2** - Above Sched.
-  **Water Conservation Area 3** - Above Sched.
-  **ENP** - Normal seasonal conditions
-  **Fl. Bay** - Normal seasonal conditions
-  **Upper East Coast** - Norm. groundwater
-  **Lower East Coast** - Norm. groundwater
-  **Lower West Coast** - Norm. groundwater

Hydrologic Conditions

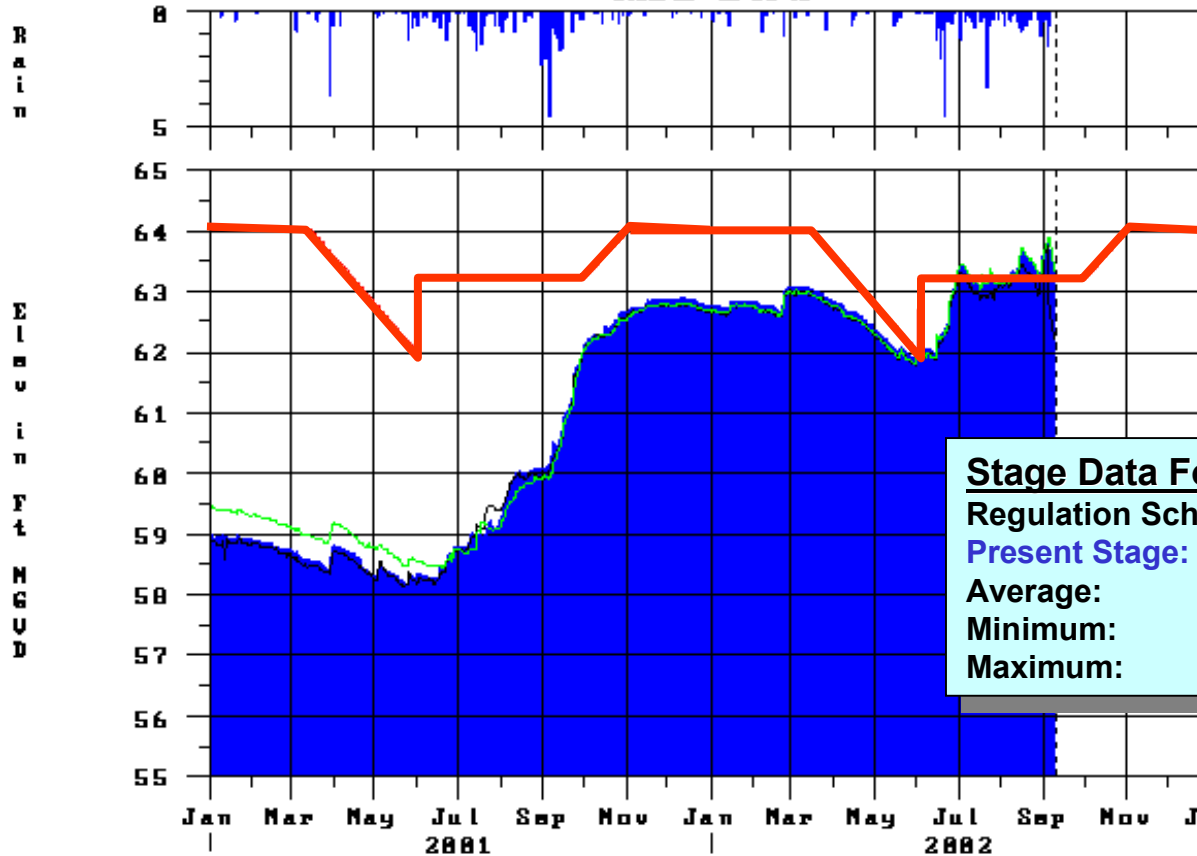
Upper Kissimmee Basins

- All lakes are at or above their regulation schedule
 - This condition is in response to heavy wet season rainfall
 - With the exception of Lake Kissimmee, all lakes are currently making large regulatory releases
 - Current S-65 regulatory releases: ~4,600 cfs
 - Expected to increase with additional rainfall



Kissimmee - Lakes Trout, Coon, Center, Lizzie & Alligator

09SEP02 00:03:43



Stage Data For This Date:

Regulation Schedule: 63.20

Present Stage: 63.02

Average: 62.66

Minimum: 59.82 (2000)

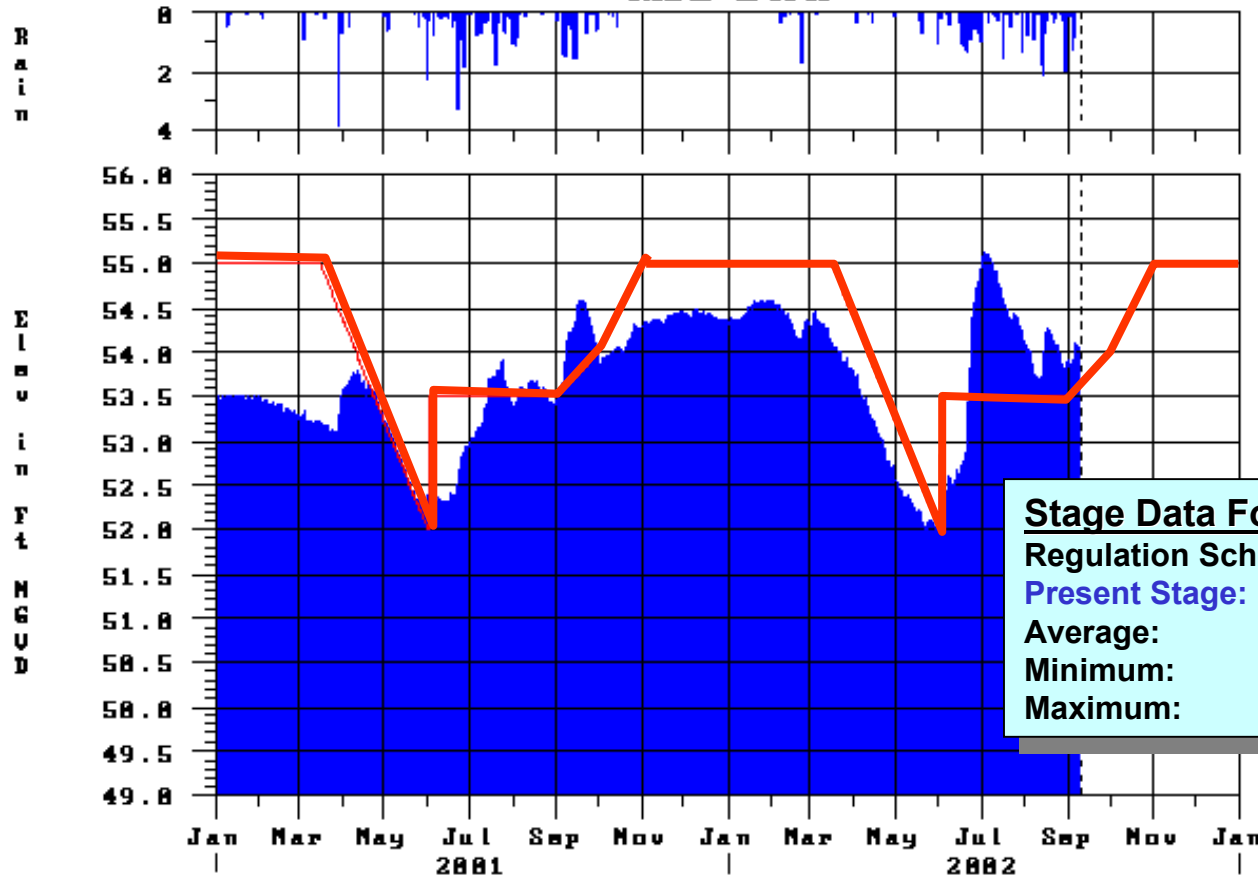
Maximum: 65.57 (1960)

— Lake Alligator Eluv
— S-60 Eluv-Head
— S-50 Eluv-Head
- - - Alternate Regulation

- - - Temporary Deviation
— Zone B Regulation
— Precip @ Kissimmee Field Station

Kissimmee River Basin - Lake Tohopekaliga

09SEP02 00:28:06



Stage Data For This Date:

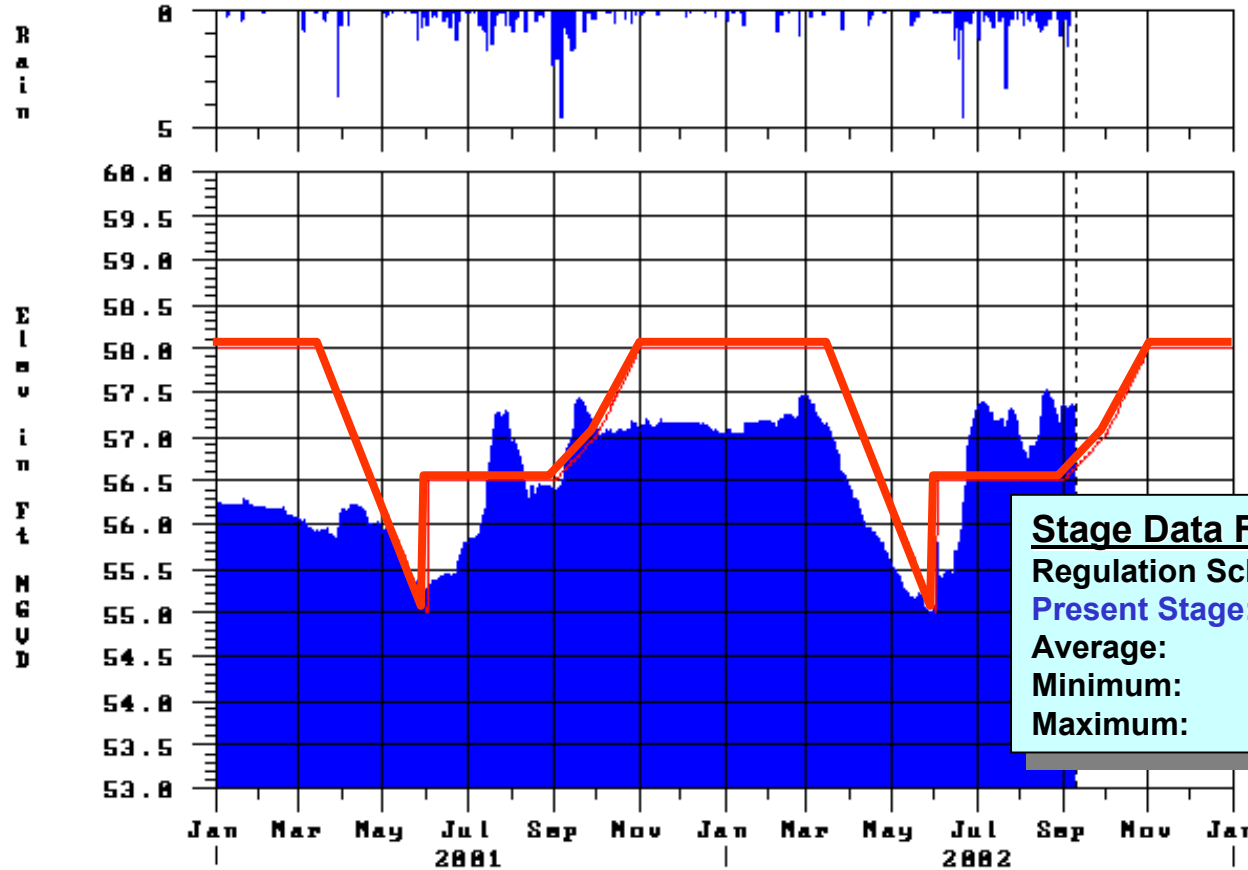
Regulation Schedule:	53.86
Present Stage:	53.98
Average:	53.54
Minimum:	49.59 (1962)
Maximum:	57.08 (1953)

— Lake Tohopekaliga
 - - - Alternate Regulation
 — Zone B Regulation
 - - - Zone B1 Regulation

— Precip @ S-61

Kissimmee River Basin - East Lake Tohopekaliga

09SEP02 00:19:53

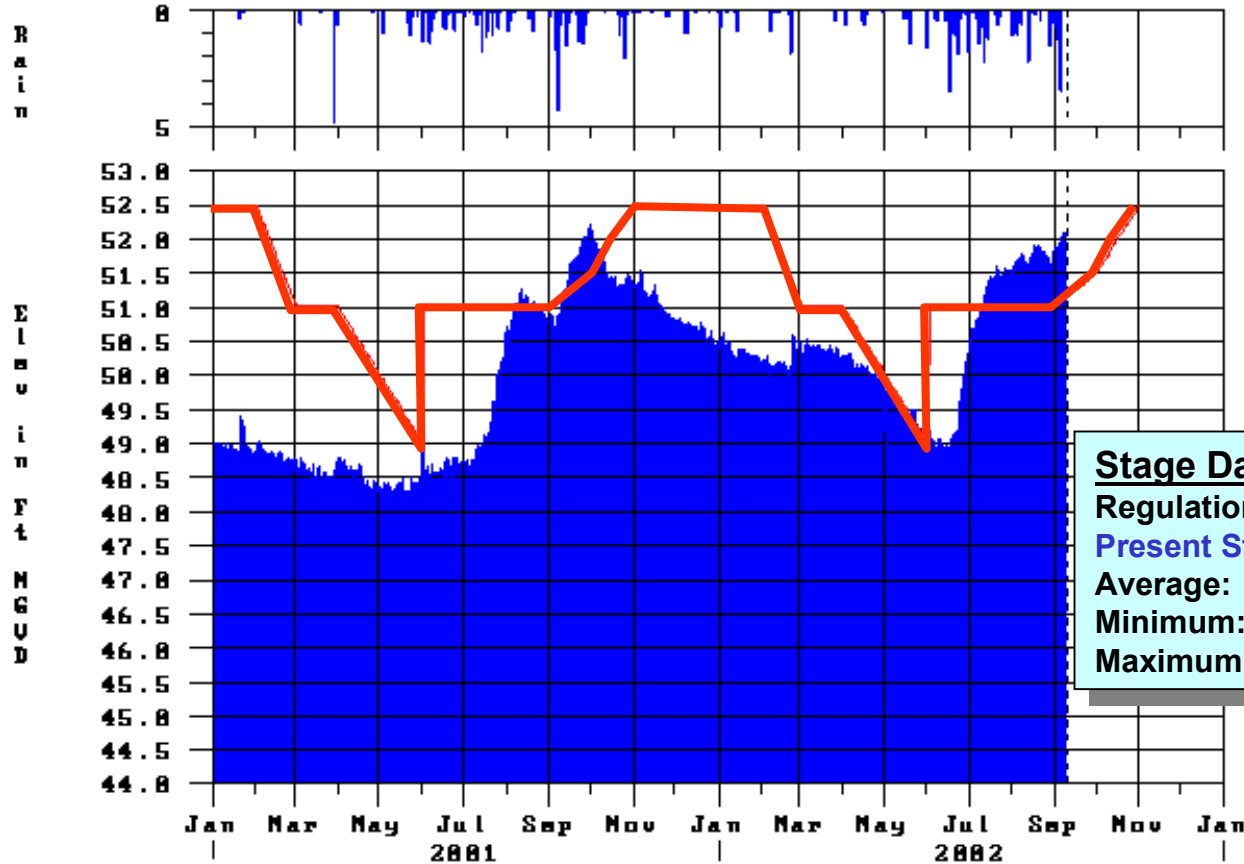


<u>Stage Data For This Date:</u>	
Regulation Schedule:	56.86
Present Stage:	57.21
Average:	56.25
Minimum:	53.10 (1961)
Maximum:	59.65 (1953)

— East Lake Tohopekaliga Elev — Precip @ Kissimmee Field Station
 - - - Alternate Regulation
 — Zone B Regulation
 - - - Zone B1 Regulation

Kissinnee River Basin - Lake Kissinnee

09SEP02 00:21:01

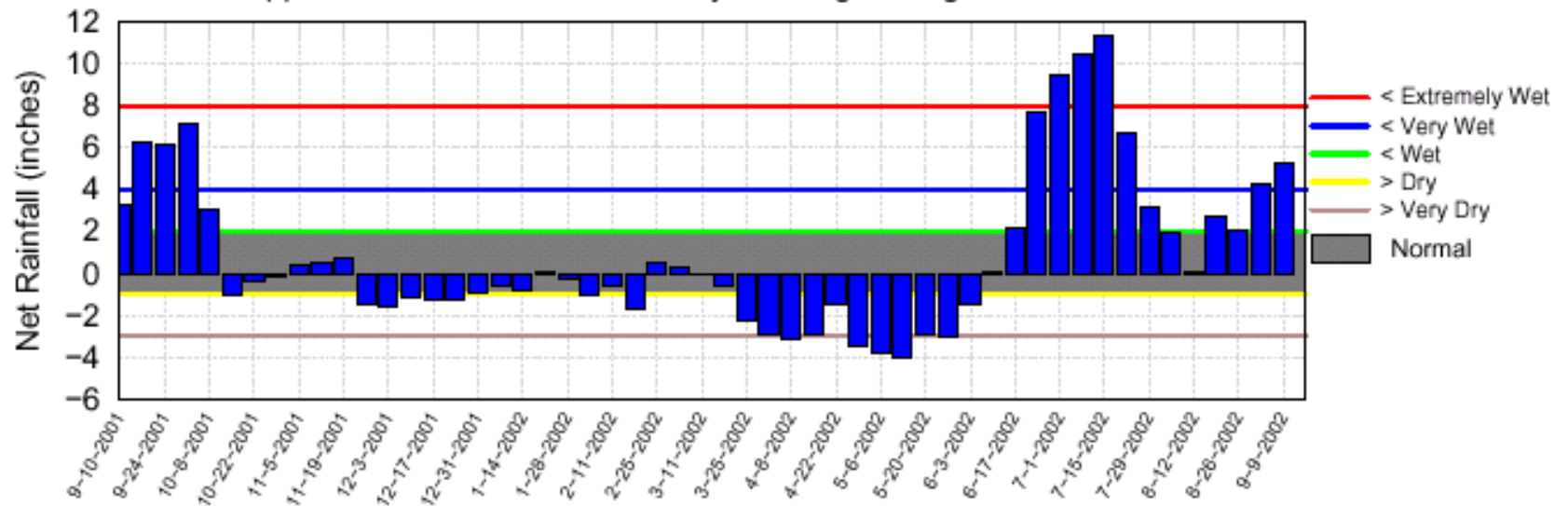


Stage Data For This Date:

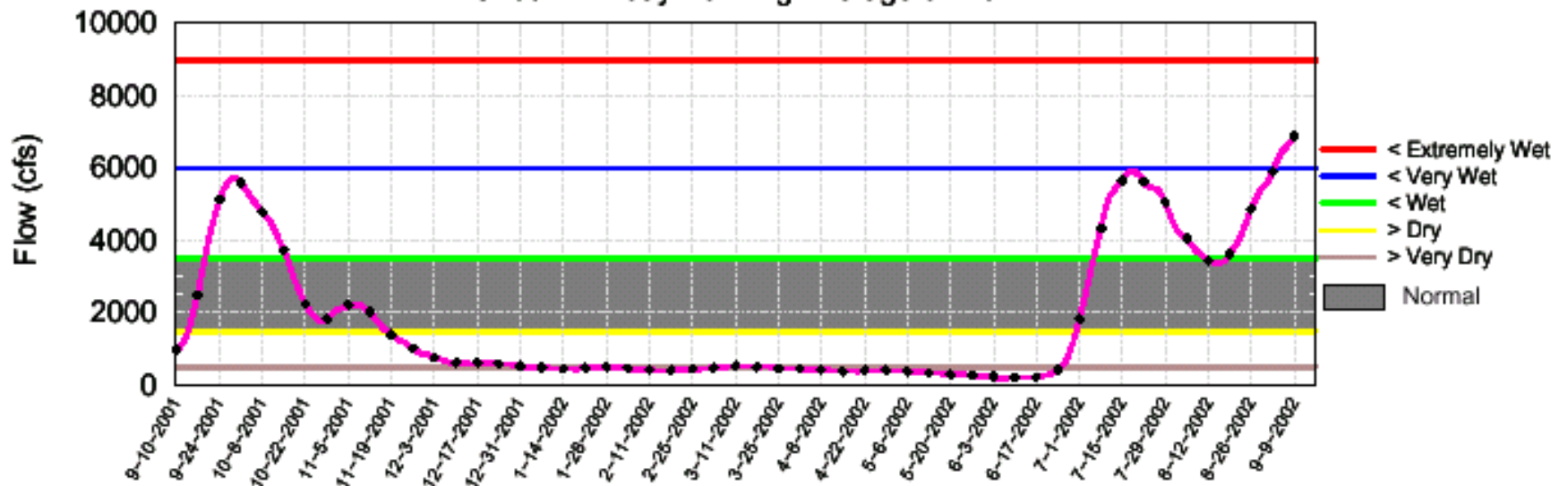
Regulation Schedule:	51.17
Present Stage:	52.26
Average:	50.63
Minimum:	45.41 (1956)
Maximum:	54.72 (1960)

Tributary Basin Condition Indicators as of September 9, 2002

Upper & Lower Kissimmee 30-day Running Average of Net Rainfall



S-65E 14-day Running Average of Flow

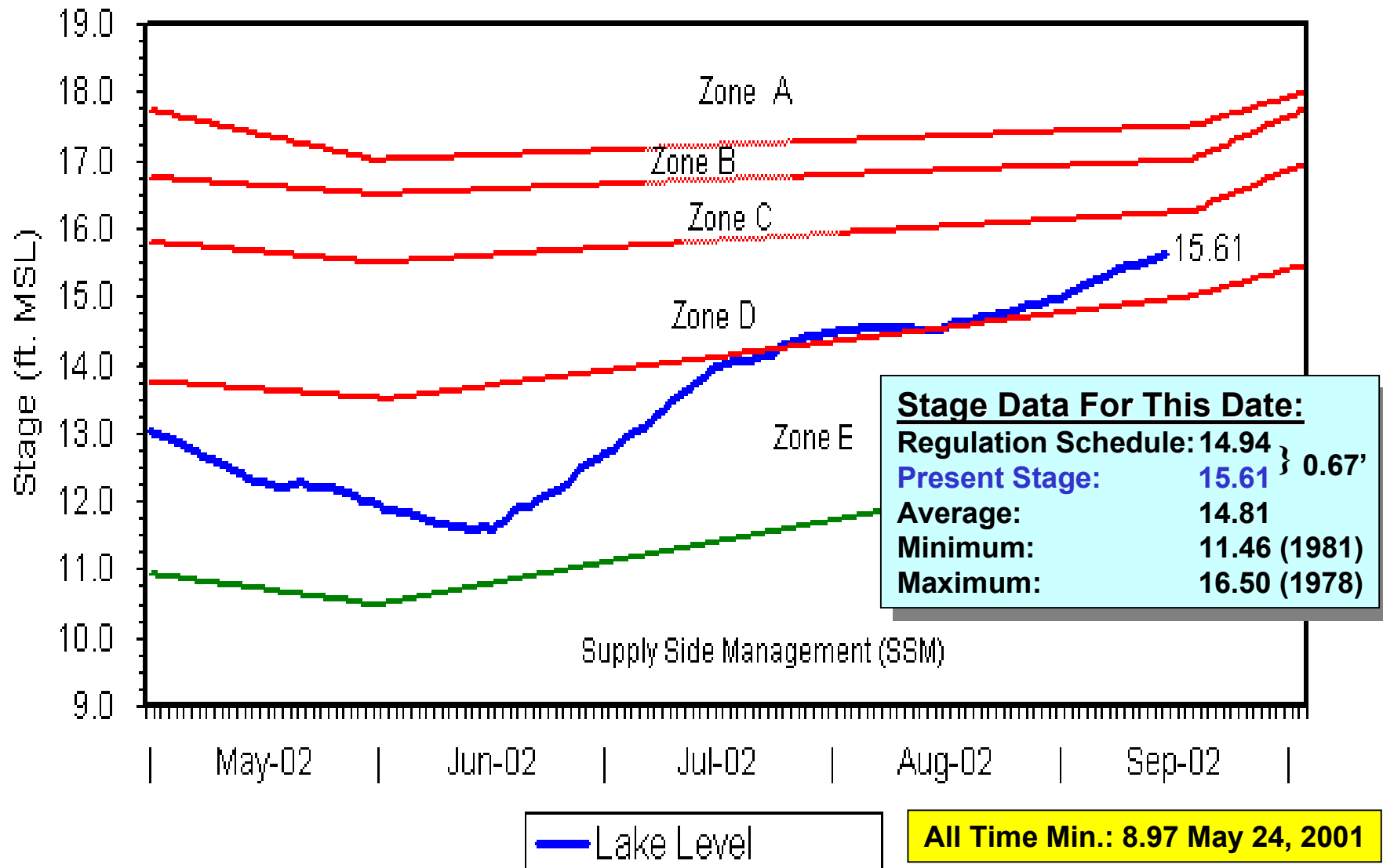


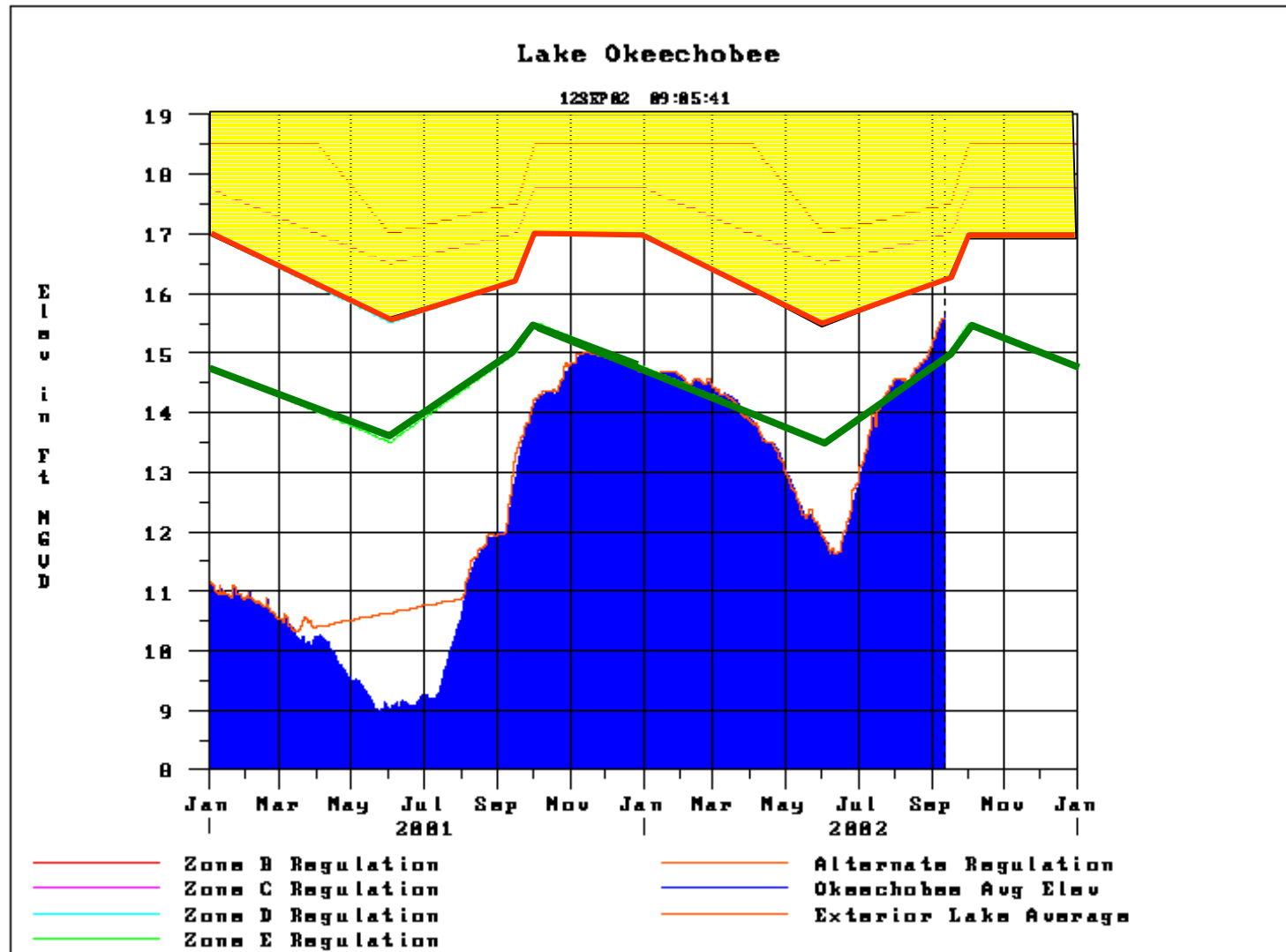
Hydrologic Conditions Lake Okeechobee

- Lake Okeechobee stages have risen sharply in response to continued rainfall over the past month (~1 ft.)
- Regulatory releases from the Upper Chain of Lakes and Kissimmee River inflows are expected to continue this trend of rising stages in the near term

Lake Okeechobee

Published: 9/12/02





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Lake Okeechobee

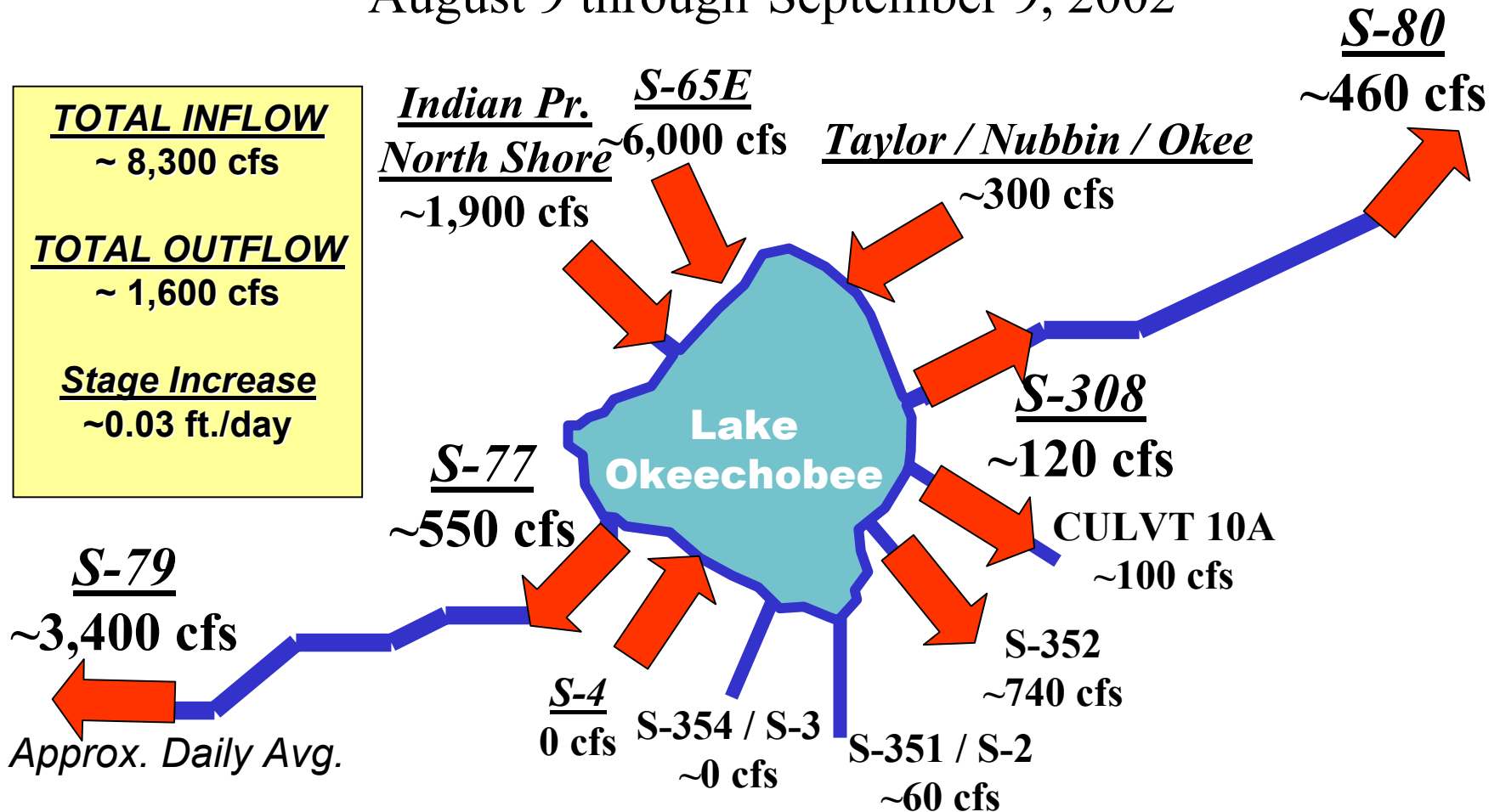
Current Operations

- **Lake Okeechobee Regulation Schedule**
 - **Stages presently in Zone D**
 - Above normal inflows
 - Wet rainfall
 - Wet seasonal forecast
 - Wet multi-seasonal forecast
- **Required regulatory discharge to the WCAs**
 - ~900 cfs to WCA-1
- **Required regulatory discharge to estuaries**
 - Level II Pulse Release initiated Tuesday Sept. 10, 2002



Estimated Average Lake Okeechobee Inflows

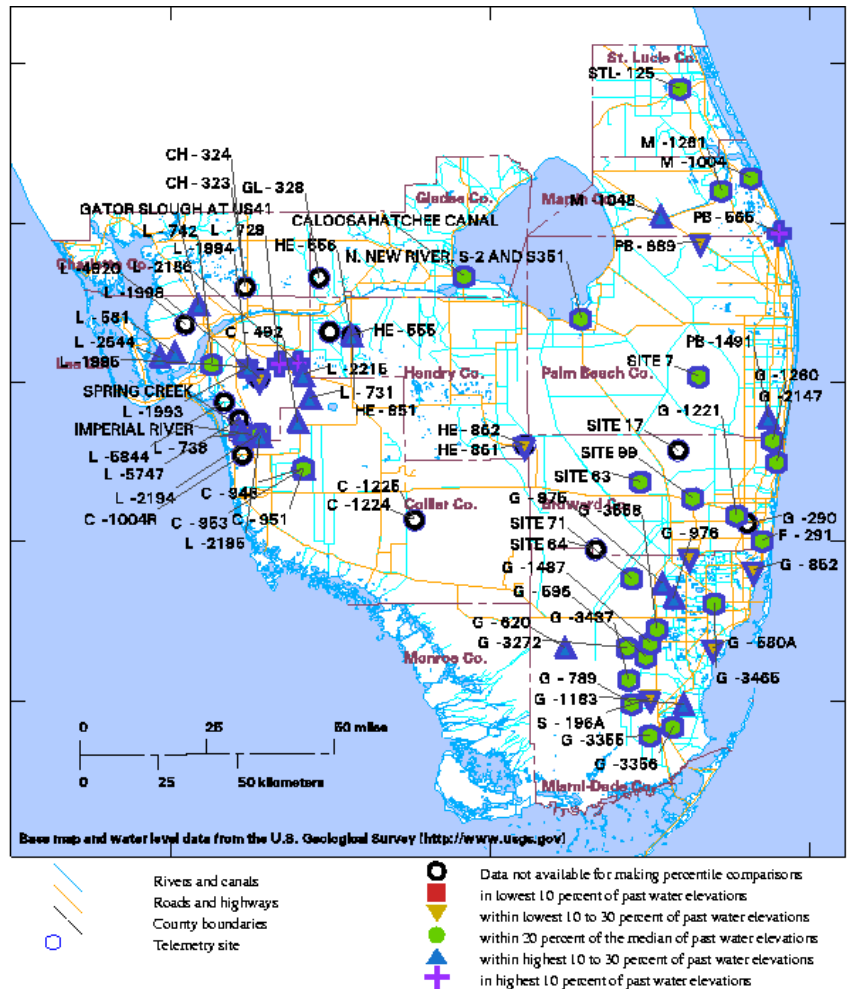
August 9 through September 9, 2002



Hydrologic Conditions

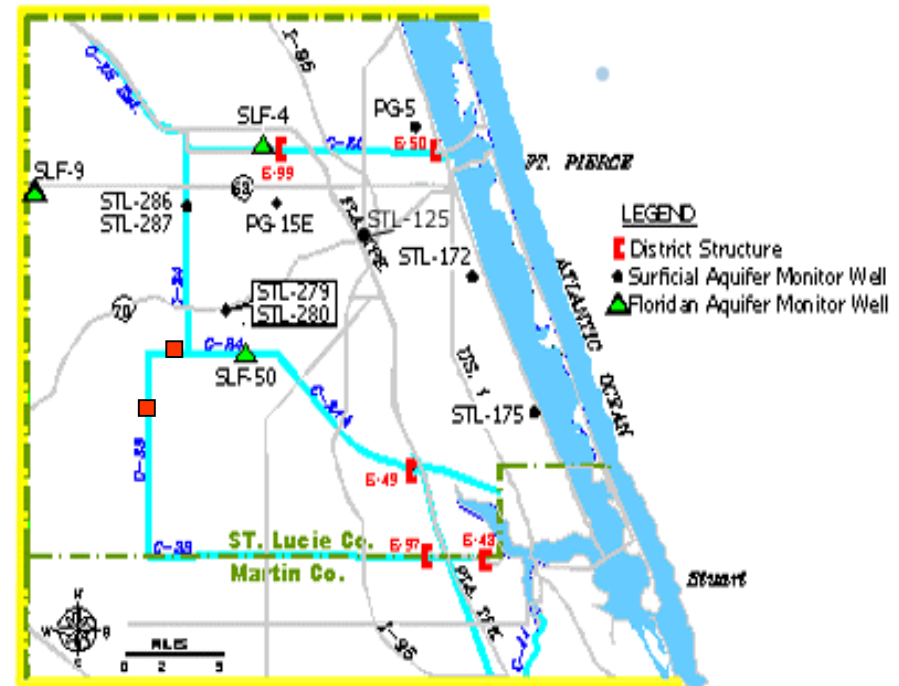
Groundwater Conditions

- Upper East Coast, Lower East Coast
 - Normal seasonal levels
- Lower West Coast Region:
 - Above normal seasonal levels



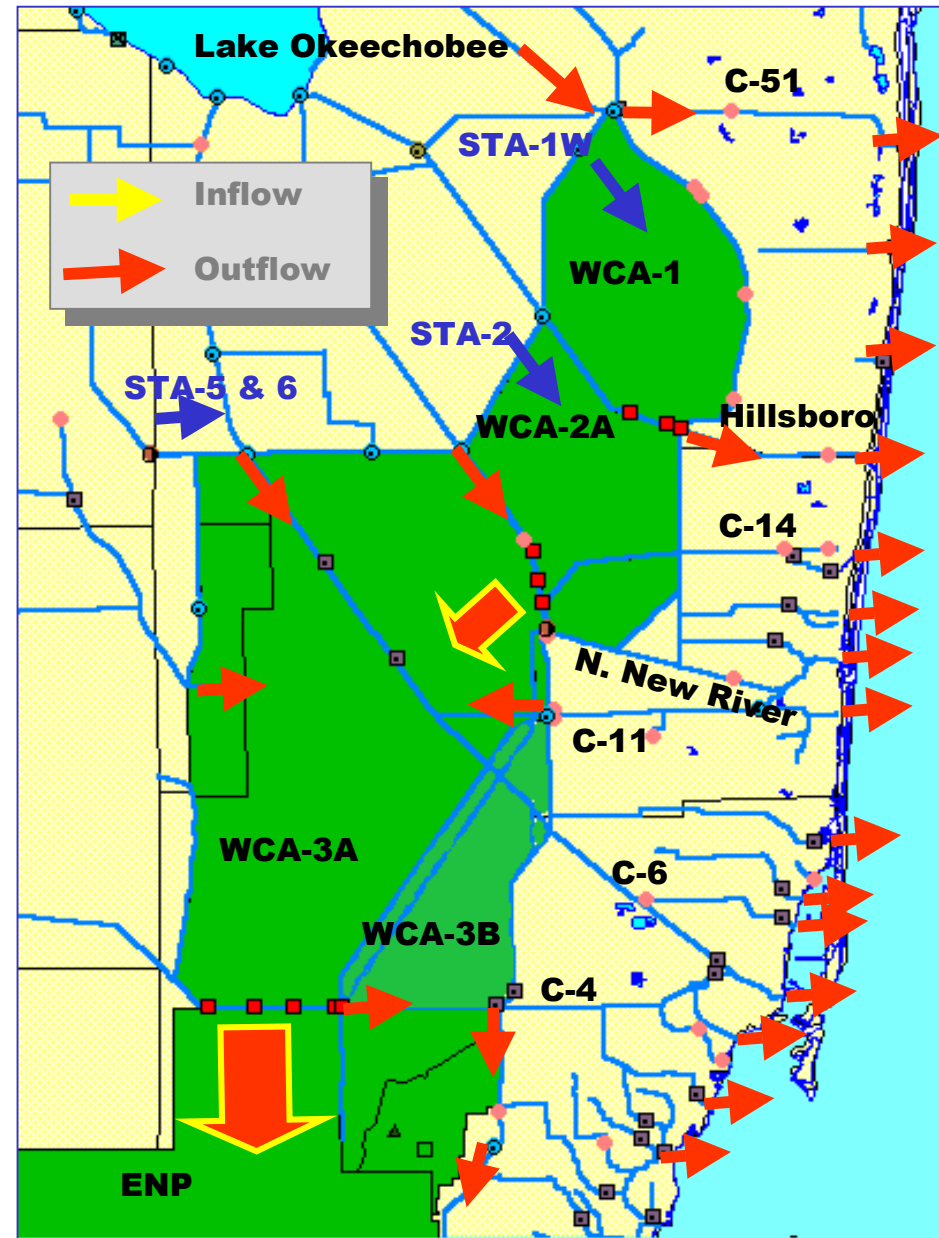
Upper East Coast

- Water levels in the C-23, C-24 & C-25 canals are normal
 - normal flood discharges made over the past month in response to rainfall



Water Conservation Areas

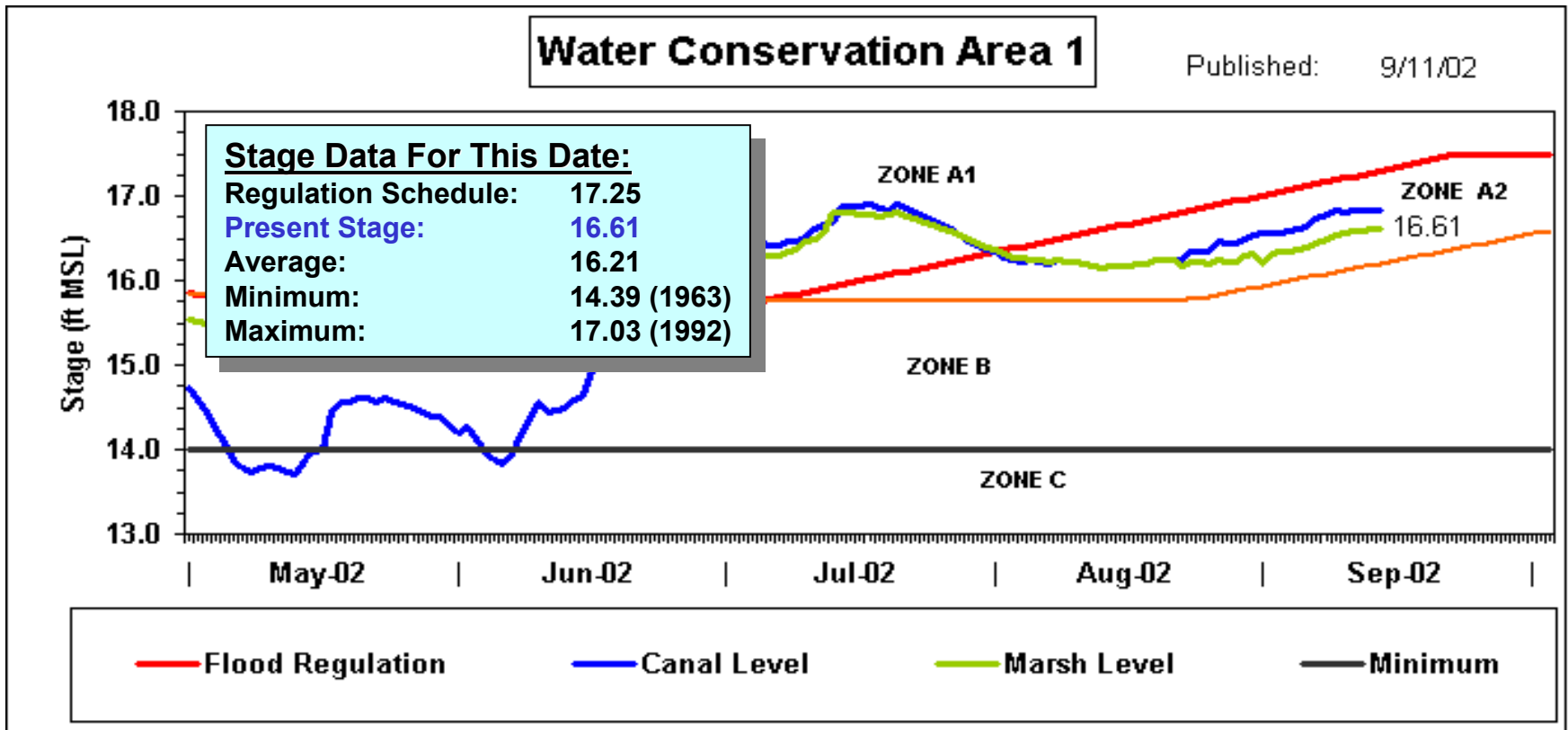
- WCA 2 & 3 stages are currently above regulation schedules
- Regulatory releases currently being made
 - WCA-2A
 - WCA-3A
- Regulatory releases from Lake Okeechobee is being passed-through WCA-1 to tide



Hydrologic Conditions

Water Conservation Areas

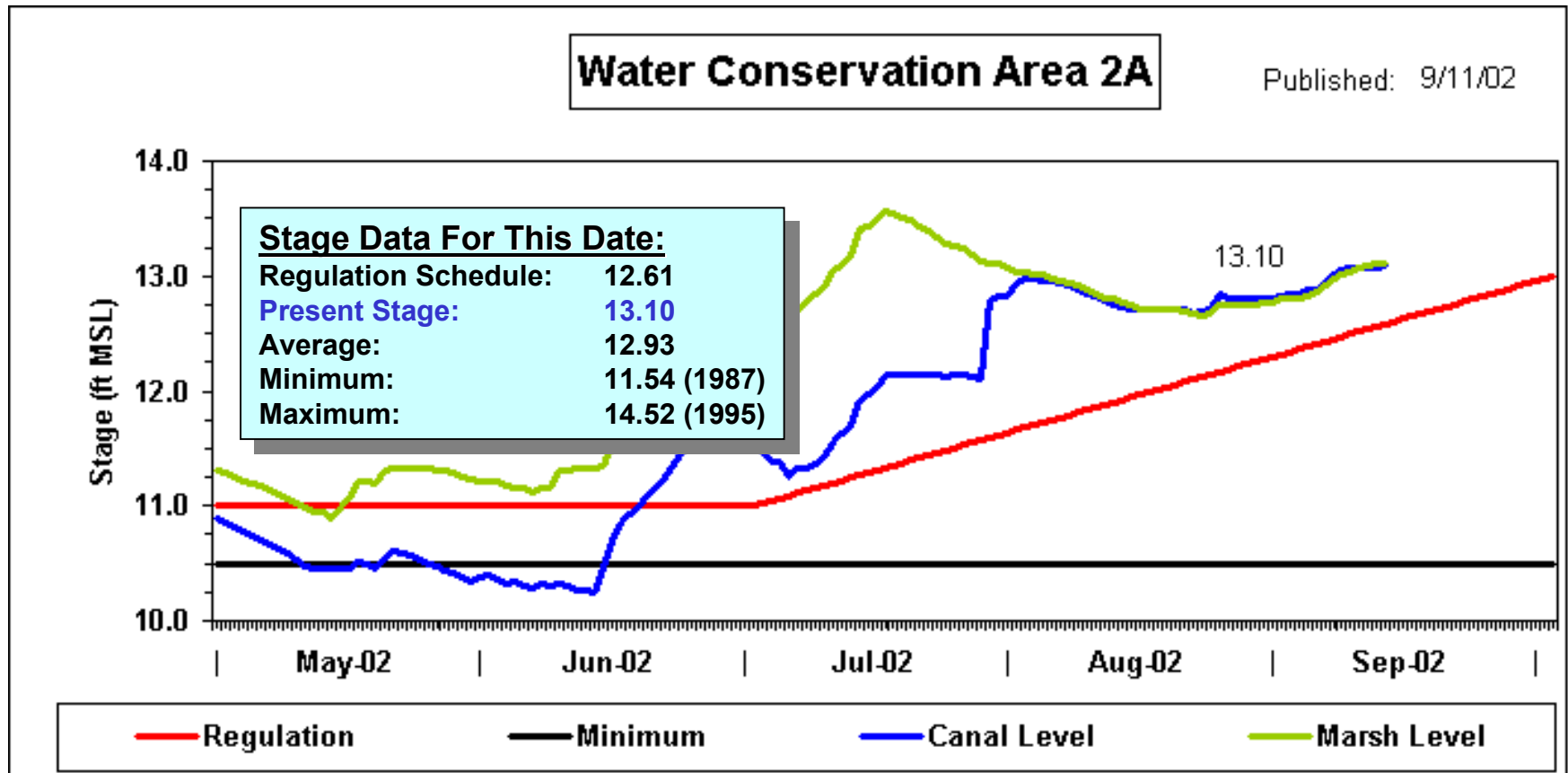
- Stages fell into Zone A2 early in August
 - Allowed regulatory releases from Lake Okeechobee



Hydrologic Conditions

Water Conservation Areas

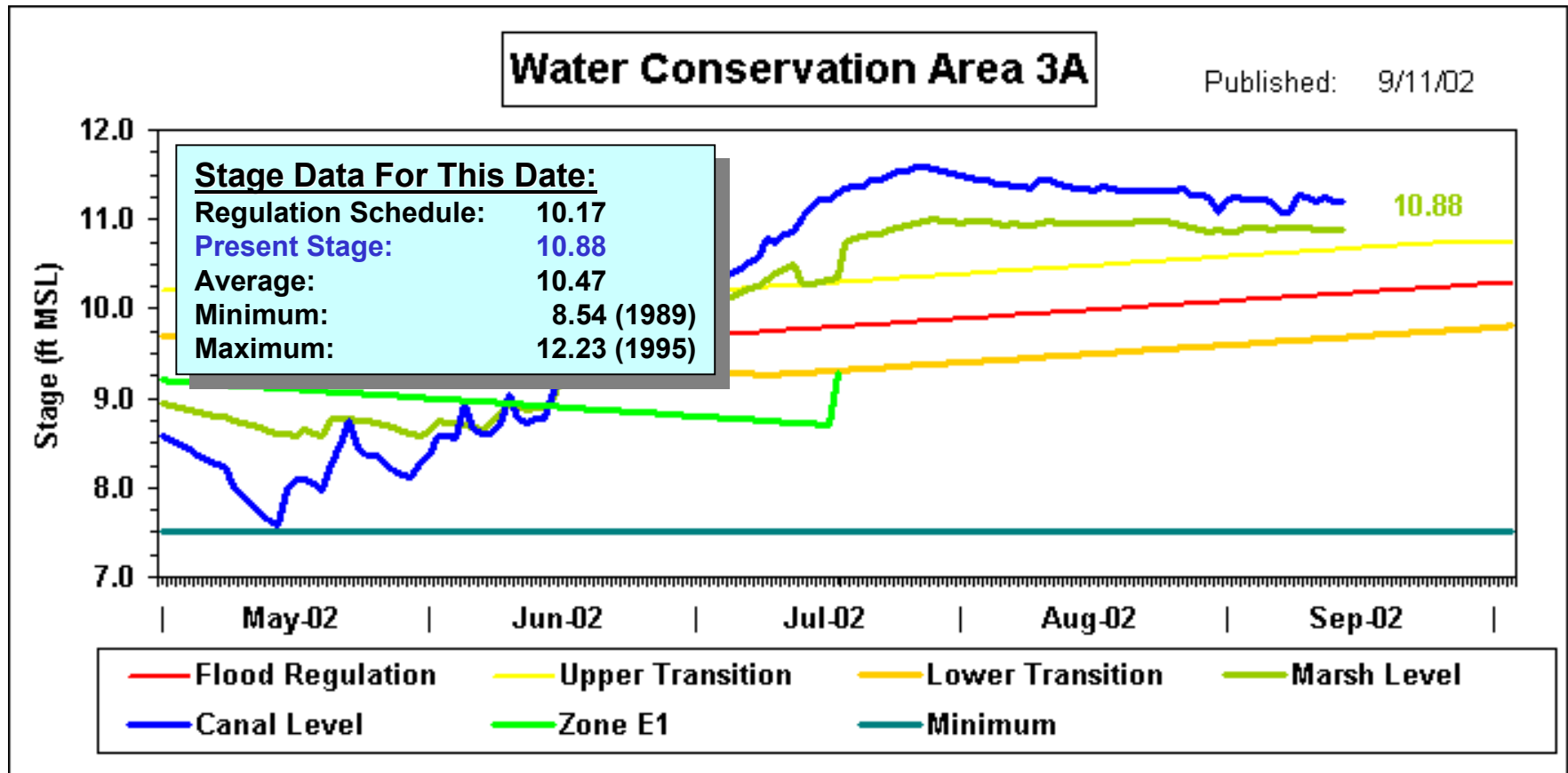
- Remained above regulation schedule through August



Hydrologic Conditions

Water Conservation Areas

- Stages in Zone A of regulation schedule - Max. Reg. Release

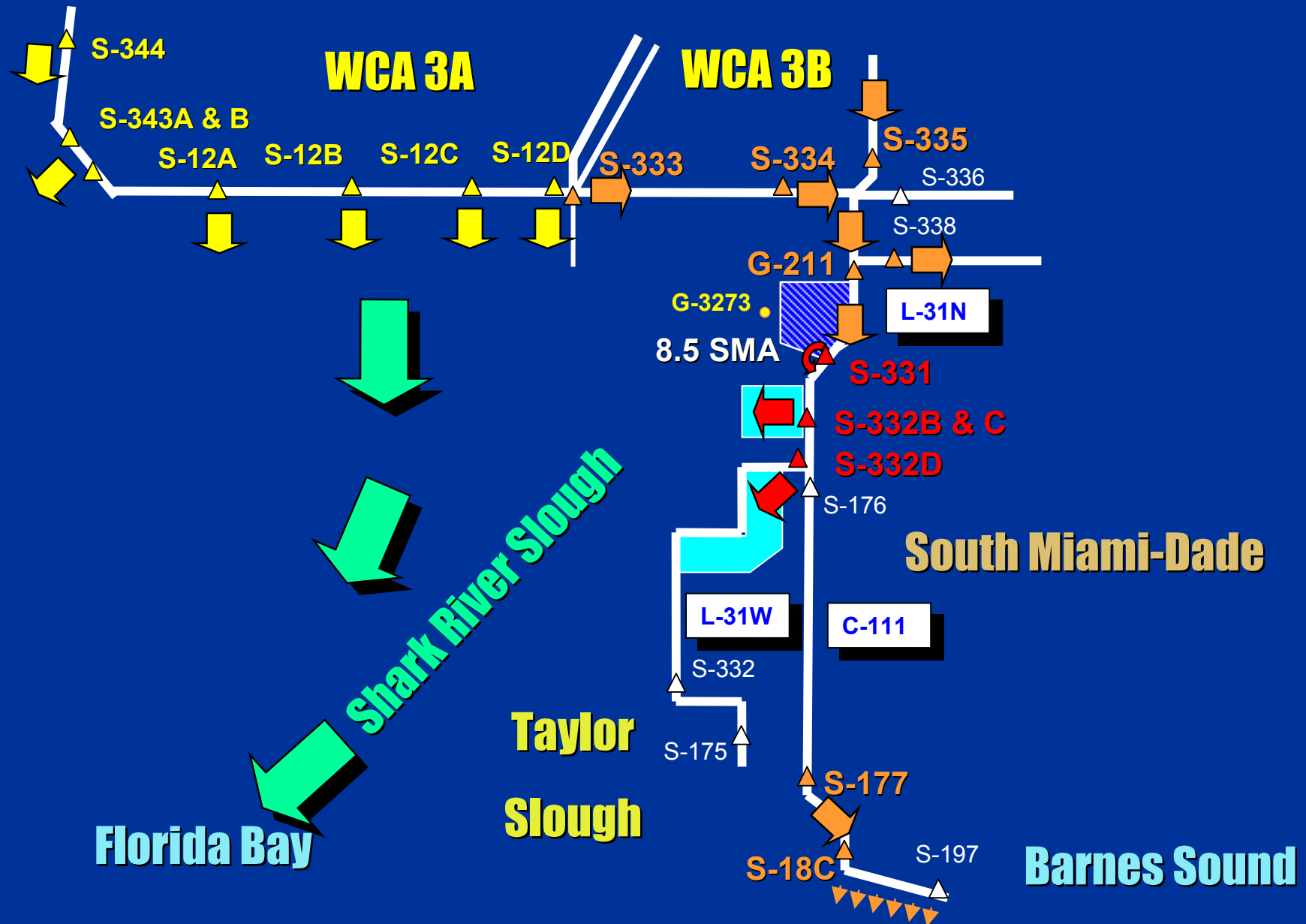


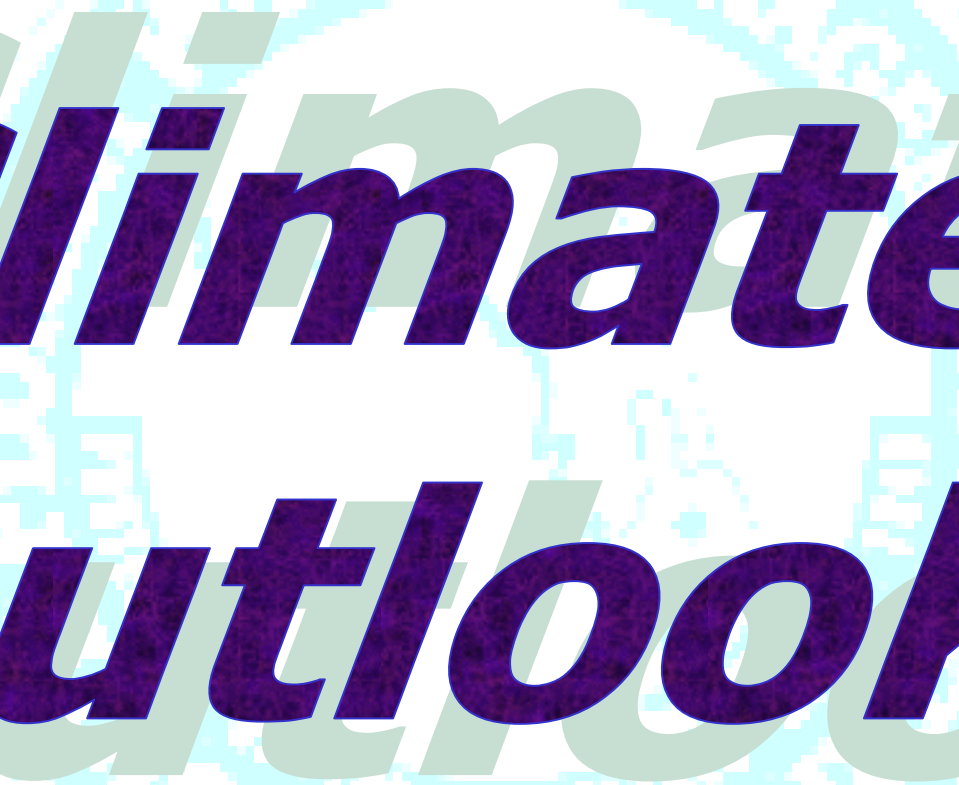
Hydrologic Conditions

SDCS Current Operations

- Following IOP criteria initiated in early August
- High stages in WCA-3A have caused concerns regarding tree island impacts
- Current operations focused on bringing water into South Miami-Dade from WCA-3A while utilizing low canal operating ranges (similar to ISOP 2001 levels)

SDCS - IOP 2001 September Operations



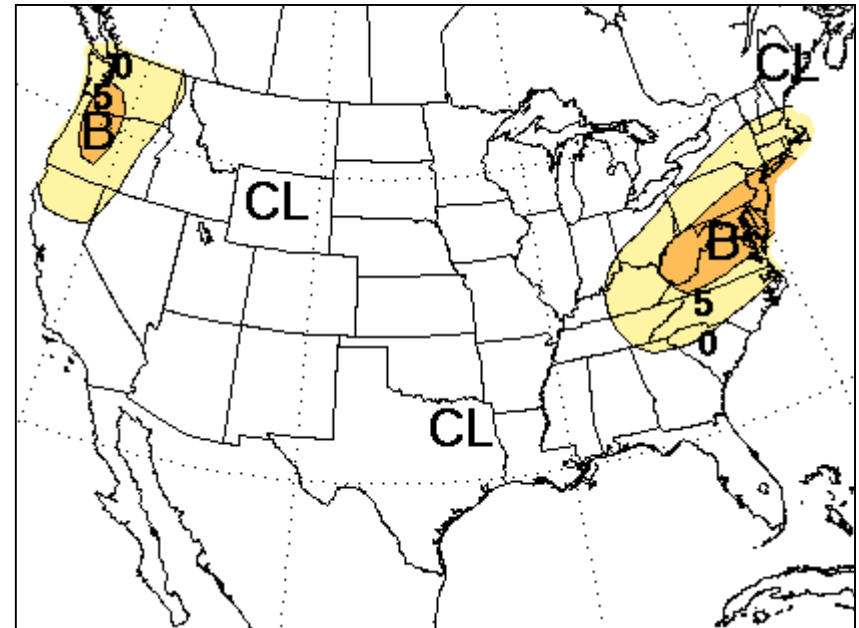


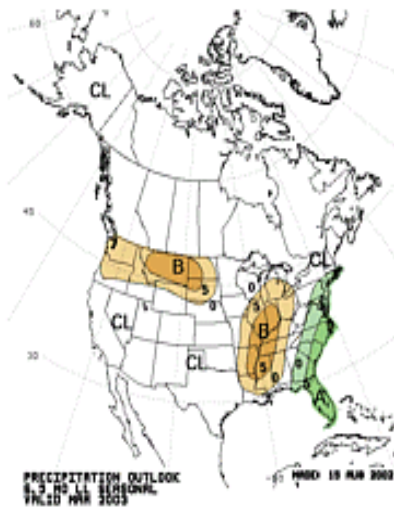
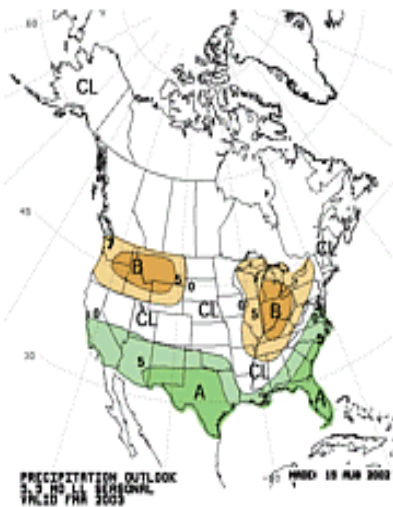
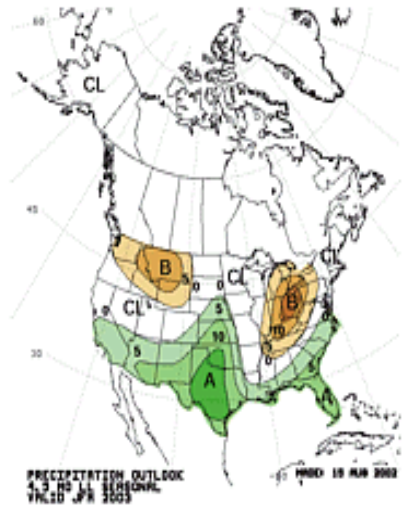
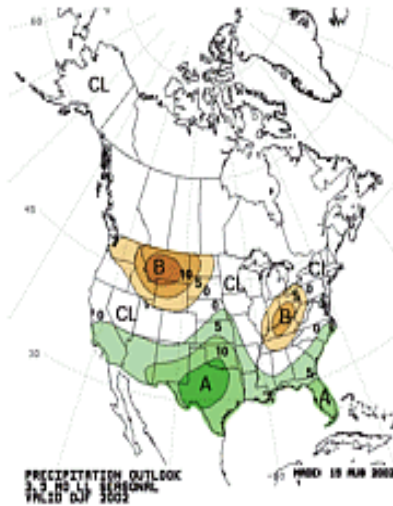
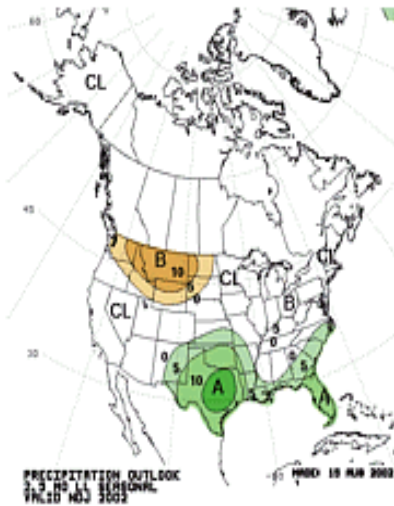
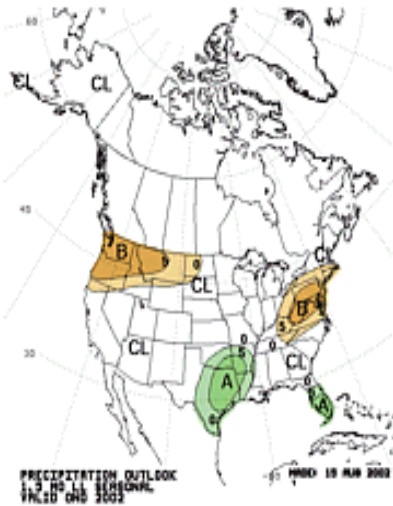
Climate Outlook

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Seasonal Climatic Outlook

- CPC reports that the period from September through October 2002 has no increased probability for either above or below average precipitation





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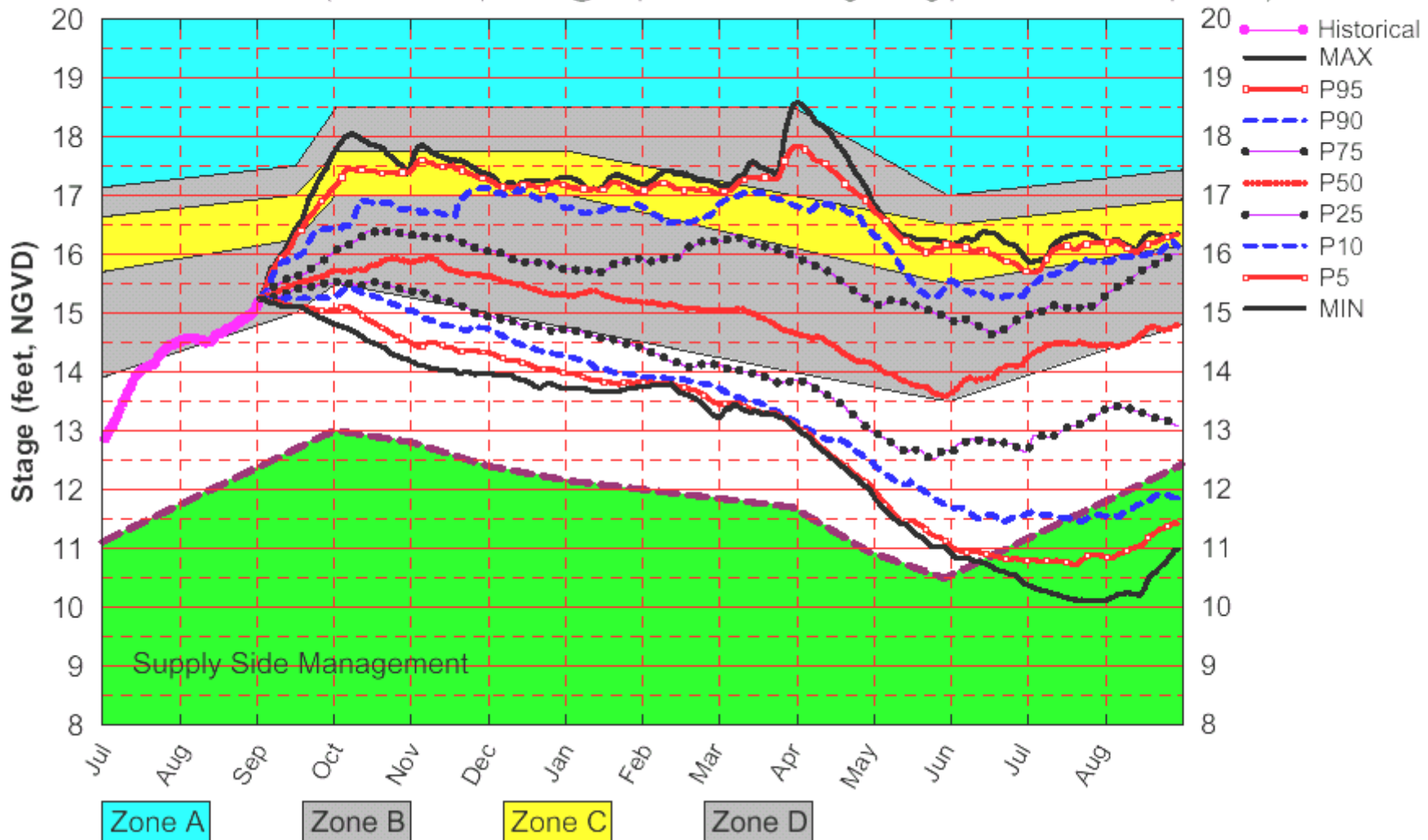


Hydrologic Outlook

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Lake Okeechobee SFWMM Sep 2002 Position Analysis

PA_2 Unconditional PA (See assumptions @ http://www.sfwmd.gov/org/pld/hsm/sfwmm_pa.html)



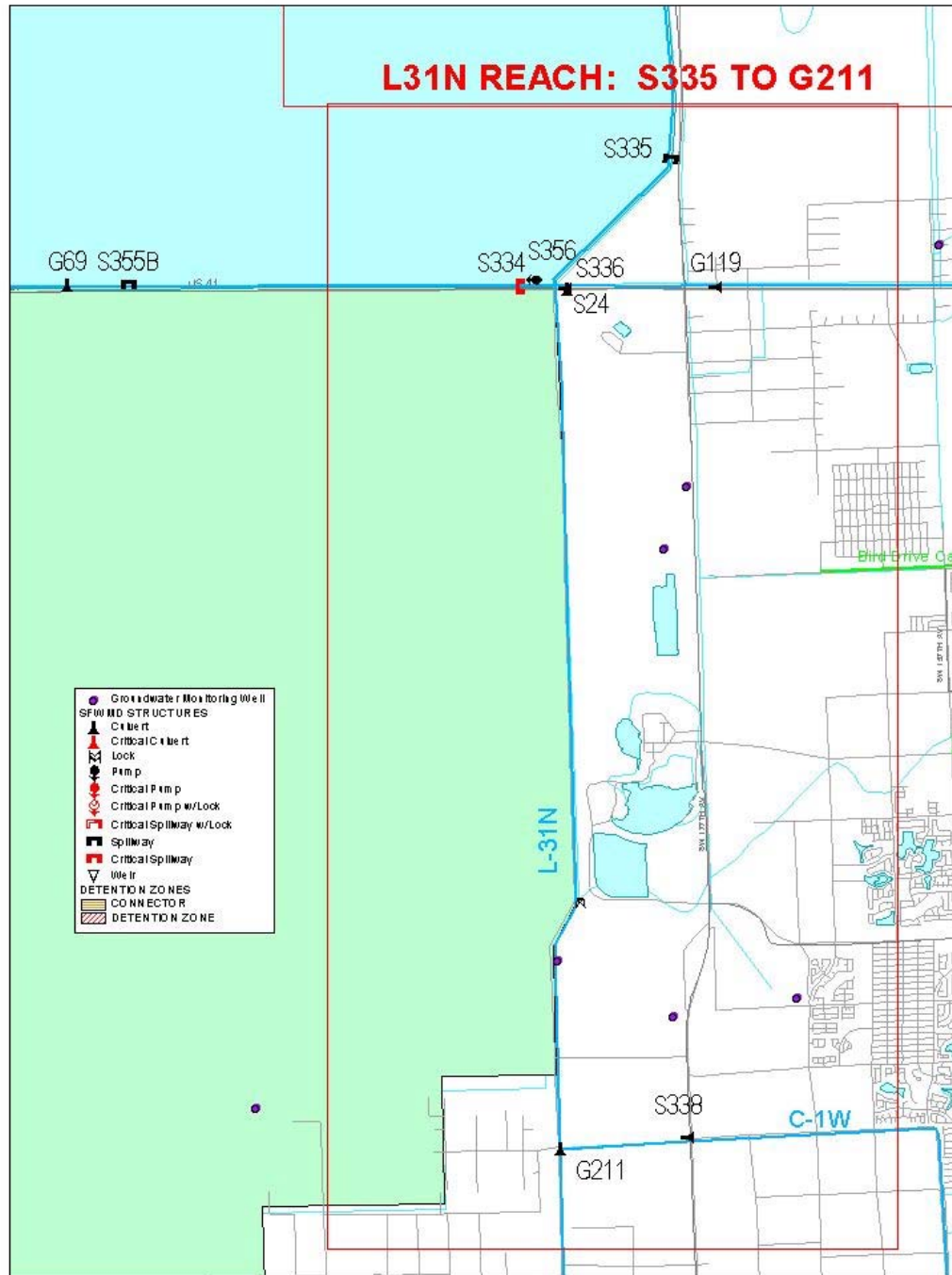
Lake Okeechobee Operational Outlook

- Lake is rapidly approaching Zone C
- Wet tributary conditions and heavy local rainfall
- The lake regulation schedule will lead USACE to continue Pulse Releases to the Caloosahatchee and St. Lucie Estuary
 - Currently in a 10-day Level II Pulse Cycle
 - Higher level pulse releases may be required in a an attempt to avoid Zone C releases in the short-term
- Significant probability that stages will be in Zone D through mid-February

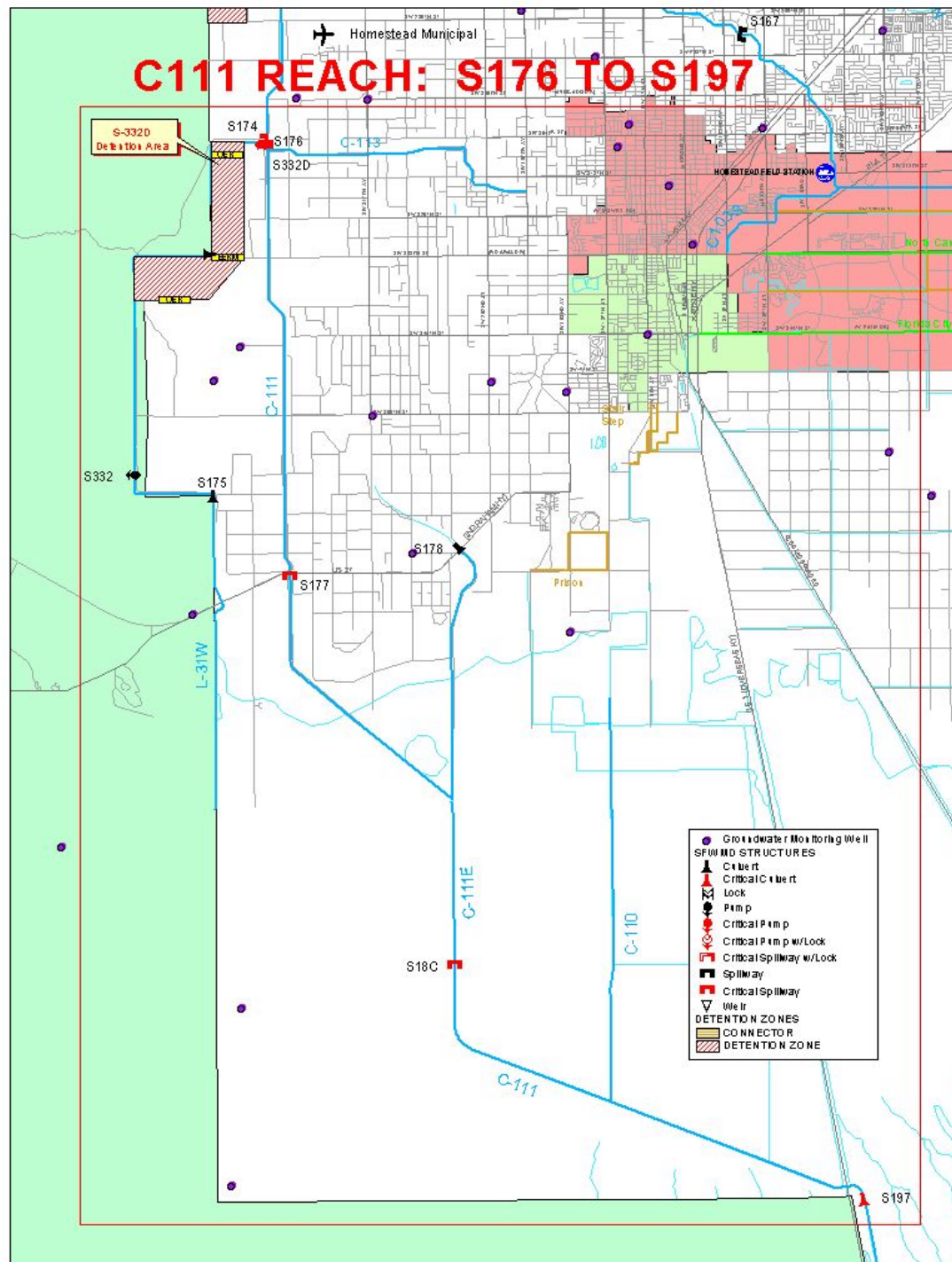
South Miami-Dade County Operational Outlook

- Below average rainfall in August has allowed groundwater levels to subside
- Stages in WCA-3A are falling slowly and approaching Zone B
- U.S. Army Corps of Engineers may soon require operational adjustments per IOP criteria
 - Terminate WCA-3 releases to SDCS
 - Raise canal operating levels
 - Corps is evaluating minor operational modifications to help deal with flooding concerns

L31N REACH: S335 TO G211



C111 REACH: S176 TO S197

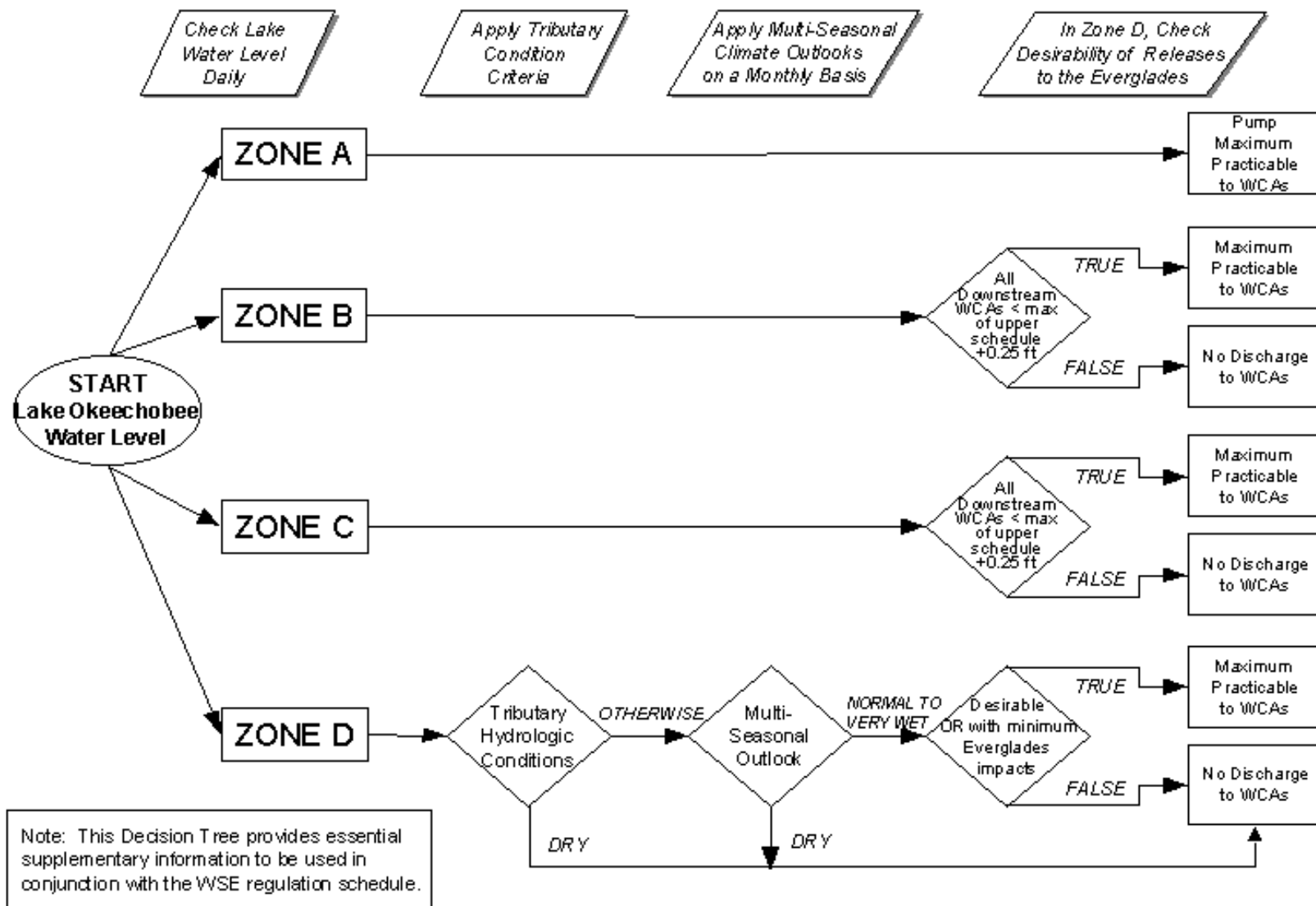




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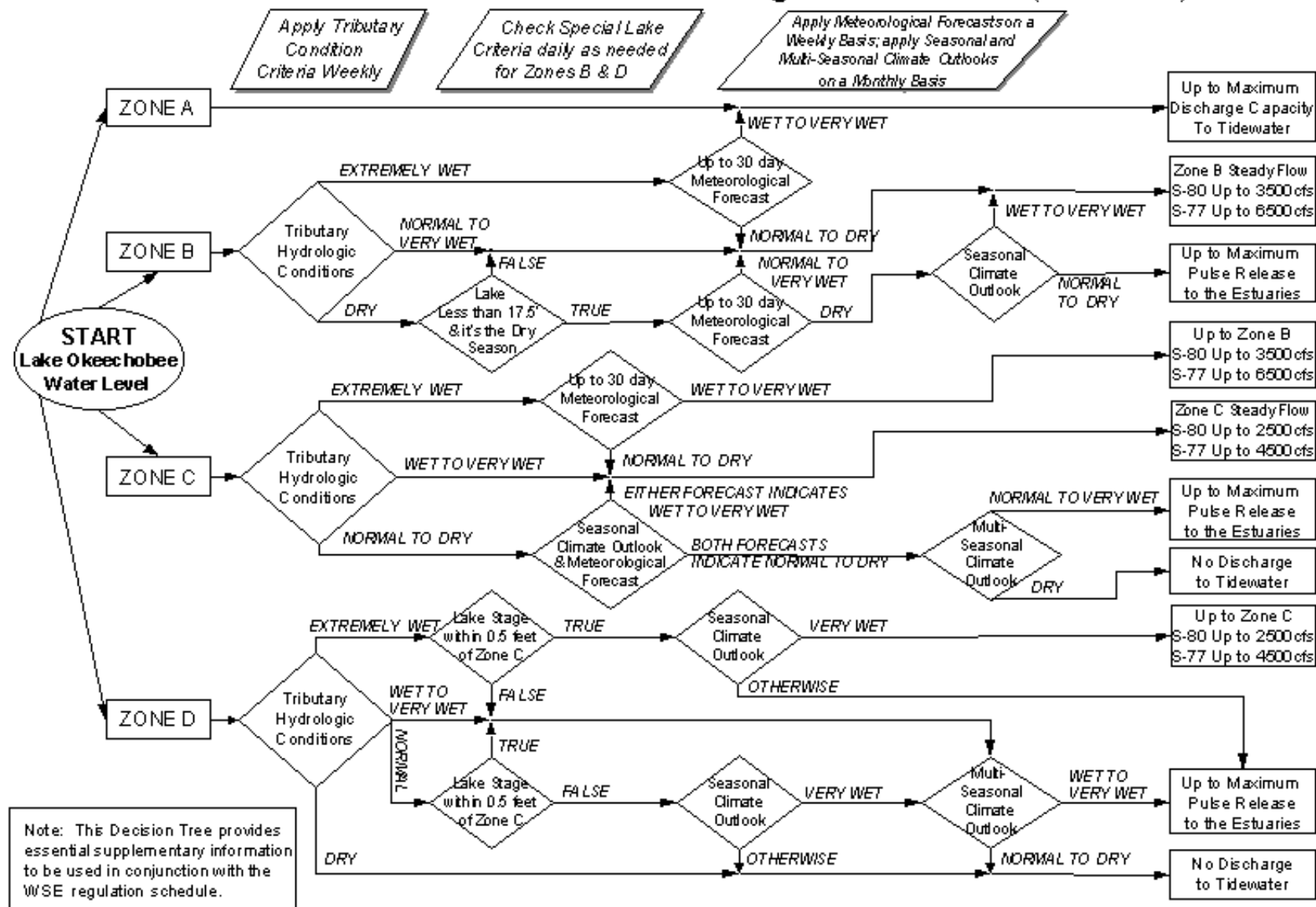
WSE Operational Guidelines Decision Tree

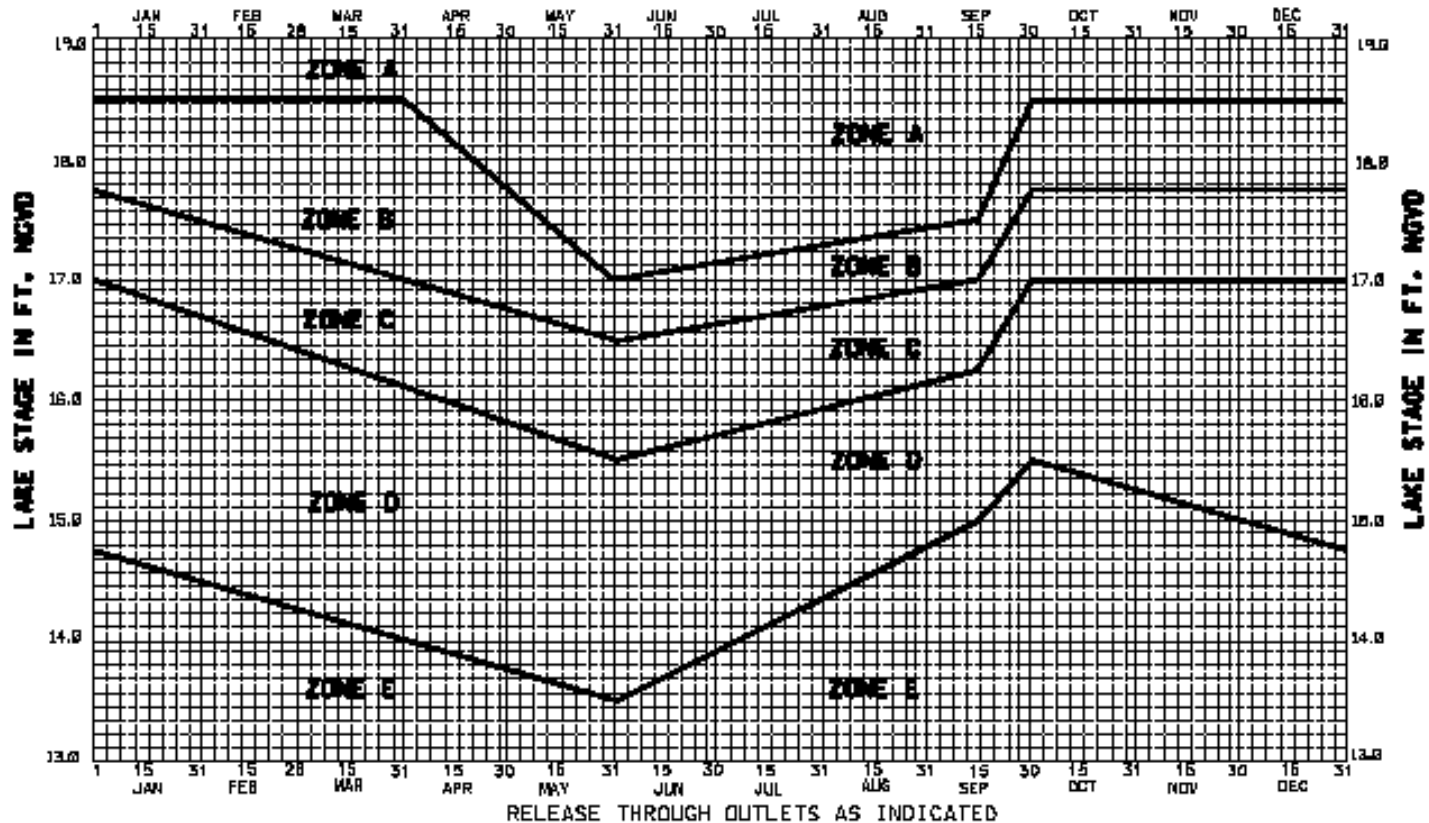
Part 1: Define Lake Okeechobee Discharges to the Water Conservation Areas



WSE Operational Guidelines Decision Tree

Part 2: Define Lake Okeechobee Discharges to Tidewater (Estuaries)





ZONE	AGRICULTURAL CANALS TO MCA# (1,2)	CALOOSAHATCHEE RIVER AT S-77 (1,2,4)	ST. LUCIE CANAL AT S-80 (1,2,4)
A	PUMP MAXIMUM PRACTICABLE	UP TO MAXIMUM CAPACITY	UP TO MAXIMUM CAPACITY
B (3)	MAXIMUM PRACTICABLE RELEASES	RELEASES PER DECISION TREE (THESE CAN RANGE FROM MAXIMUM PULSE RELEASE UP TO MAXIMUM CAPACITY)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM MAXIMUM PULSE RELEASE UP TO MAXIMUM CAPACITY)
C (3)	MAXIMUM PRACTICABLE RELEASES	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 6500 CFS)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 3500 CFS)
D (3,5)	AS NEEDED TO MINIMIZE ADVERSE IMPACTS TO THE LITTORAL ZONE WHILE NOT ADVERSELY IMPACTING THE EVERGLADES. (SEE NOTE 5.1)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 4500 CFS)	RELEASES PER DECISION TREE (THESE CAN RANGE FROM NO DISCHARGE UP TO 2500 CFS)
E	NO REGULATORY DISCHARGE	NO REGULATORY DISCHARGE	NO REGULATORY DISCHARGE

- NOTES: 1) SUBJECT TO FIRST REMOVAL OF RUNOFF FROM DOWNSTREAM BASINS
 2) GUIDELINES FOR WET, DRY AND NORMAL CONDITIONS ARE BASED ON: 1) SELECTED CLIMATIC INDICES AND TROPICAL FORECASTS AND 2) PROJECTED INFLOW CONDITIONS. RELEASES ARE SUBJECT TO THE GUIDELINES IN THE WSE OPERATIONAL DECISION TREE, PARTS 1 AND 2.
 3) RELEASES THROUGH VARIOUS OUTLETS MAY BE MODIFIED TO MINIMIZE DAMAGES OR OBTAIN ADDITIONAL BENEFITS. CONSULTATION WITH EVERGLADES AND ESTUARINE BIOLOGISTS IS ENCOURAGED TO MINIMIZE ADVERSE EFFECTS TO DOWNSTREAM ECOSYSTEMS.
 4) PULSE RELEASES ARE MADE TO MINIMIZE ADVERSE IMPACTS TO THE ESTUARIES
 5) ONLY WHEN THE MCA# ARE BELOW THEIR RESPECTIVE SCHEDULES

CENTRAL AND SOUTHERN FLORIDA
 INTERIM REGULATION SCHEDULE
 LAKE OKEECHOBEE

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT
 CORPS OF ENGINEERS, JACKSONVILLE, FLORIDA
 DATED: 5 NOVEMBER 1999

WSE (WITH CLIMATE OUTLOOK)